EPI-LOG

Communicable Disease and Epidemiology News
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Laurie K. Stewart, MS, Editor (laurie.stewart@metrokc.gov)

Public Health
Seattle & King County
HEALTHY PEOPLE. HEALTHY COMMUNITIES.
Epidemiology, Prevention Division
Wells Fargo Center
999 Third Avenue, Suite 500
Seattle, WA 98104-4039

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Update: Multi-State Mumps Outbreak: United States

As of April 26, 2006, over 1,650 cases of suspect, probable, or confirmed mumps have been reported to the Centers for Disease Control and Prevention. The majority of cases have occurred in Midwestern states, with 1,120 reported in Iowa, 222 in Kansas, 149 in Nebraska, and 157 in Illinois. Most cases have occurred in previously vaccinated persons eighteen to twenty-five years of age who live on college campuses. The effectiveness of MMR against mumps is approximately 80 percent after one dose and approximately 90 percent after two doses. Thus, in outbreaks among populations with high vaccine coverage rates, it is not unusual for most case to have been vaccinated, and a history of vaccination does not rule-out mumps.

The mumps viral strain has been identified as genotype G, a common genotype circulating globally. A large outbreak is ongoing in the United Kingdom, primarily affecting unvaccinated young adults

Although no cases related to this outbreak have been reported locally, the potential exists for spread to our region via travel. **Thus**, **this is a good time to review measles, mumps and rubella (MMR) vaccine coverage of all adult and pediatric patients, and to vaccinate persons who have not received the recommended number of doses.** Children should receive 2 doses of MMR vaccine by 4-6 years of age and can receive the 2nd dose as soon as 28 days following the first dose.

Adults should have received at least one dose of vaccine. A second dose of MMR is recommended for adults who:

- Are students (and for outbreak control, work) in postsecondary educational institutions;
- Work in a health-care facility
- Are international travelers. Mumps remains a common disease in many parts of the world because only 38 percent of countries require mumps vaccination as part of their routine childhood immunization schedule.

Mumps Disease

Mumps is an acute viral infection characterized by a non-specific prodrome including myalgia, anorexia, malaise, headache, and fever, followed by acute onset of unilateral or bilateral tender swelling of parotid or other salivary glands. In unvaccinated populations, an estimated 30 percent to 70 percent of mumps infections are associated with typical acute parotitis. However, as many as 20 percent of infections are asymptomatic, and nearly 50 percent are associated with non-specific or primarily respiratory symptoms, with or without parotitis. Complications of mumps infection can include deafness, orchitis, oophoritis, or mastitis (inflammation of the testicles, ovaries, or breasts respectively), pancreatitis, meningitis/encephalitis, and spontaneous abortion. With the exception of deafness, these complications are more common among adults than children.

Transmission of mumps virus occurs by direct contact with respiratory droplets, saliva or contact with contaminated fomites. The incubation period is generally 16-18 days (range 12-25 days) from exposure to onset of symptoms. Mumps virus has been isolated from saliva from between 2 and 7 days before symptom onset until 9 days after onset of symptoms.

Mumps Diagnosis and Testing

Acute mumps infection can be confirmed by the presence of serum mumps immunoglobulin M (IgM), a four-fold rise in serum mumps immunoglobulin G (IgG) titer between acute and convalescent phase serum specimens, positive mumps virus culture, or detection of viral RNA by reverse transcription-polymerase chain reaction (RT-PCR).

It is important to obtain serological tests for mumps within the right time frame. A positive serological test for mumps IgM antibody 5 or more days after onset of parotitis is diagnostic; however, a negative IgM test obtained on or before day 5 after parotitis onset is inconclusive, and should be repeated. A positive mumps IgG antibody test and a negative IgM in a patient with a history of mumps vaccination is consistent with immunity to mumps infection. If the suspected case has received one or more doses of MMR, the IgM response may be missing, delayed, or transient.

The differential diagnosis of mumps includes other viral infections, including parainfluenza virus, Coxsackie viruses, influenza A, and HIV infection in children. Suppurative parotitis is uncommon, and typically caused by *S. aureus*, *streptococci*, *anaerobes* or gram-negative organisms. Both drugs and metabolic conditions can cause parotid swelling.

Report suspected cases of mumps to Public Health at (206)-296-4774.

For laboratory evaluation of a person with suspected mumps, please obtain the following specimens:

- **Serology: Collect 7-10 ml of blood in a red top or serum separator tube (SST)**
- **Collect buccal swab, throat swab and urine** up to 9 days after symptom onset. Place swabs (buccal and throat swabs can be combined) in a tube containing 2-3 mls of viral transport medium or cell culture medium (MEM or Hanks Balanced Salt Solution) or other sterile isotonic solution (phosphate buffered saline).
- **Urine**: collect 5-10 mls from clean catch urine and store in a screw top sterile container, preferably a 15 ml centrifuge tube. Keep samples cold (4°C), but do not freeze.

To obtain a buccal swab, massage the parotid gland area (the space between the cheek and teeth just below the ear) for about 30 seconds prior to collection of the buccal secretions. The parotid duct (Stensen's duct) drains in this space near the upper rear molars. A commercial product designed for collection of throat cultures or a plain Dacron or cotton tipped swab can be used for the collection of the buccal swab.

Clinicians should have an increased index of suspicion for mumps, particularly among persons with travel to areas where cases are occurring or who have had contact with persons with a similar illness. Although mumps is not an immediately notifiable condition in Washington State, during this large U.S. outbreak, we request clinicians report to Public Health cases of suspect mumps as soon as possible, preferably while the patient is still in the office. This will to allow us to expedite appropriate diagnostic testing and case investigation.

If it is not possible to report while the patient is in the office, advise the patient to avoid contact with the public (stay home from work, school, and child care), until mumps has been ruled out, or an alternate diagnosis has been made, and let the patient know that Public Health will be contacting them.

Seattle TB Intensive in June 2006

The Francis J. Curry National TB Center, in conjunction with Seattle-King County Public Health Department, and American Lung Association of Washington and Idaho, will conduct a 2-day clinical course in Seattle, Washington on June 22nd and 23rd. This course will cover TB treatment, diagnosis, screening, radiology, and more. For complete course description and application information, please visit:
www.nationaltbcenter.edu/training/tb_intensive.cfm

Please note: we are obligated to prioritize clinicians who diagnose and treat tuberculosis from within the Western region (Alaska, California, Colorado, Hawaii, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming, and the Pacific Islands). Please submit your application as soon as possible. The application form in PDF format can be downloaded from:
www.nationaltbcenter.edu/training/tb_intensive_seattle.pdf

All applications will be considered and participants will be informed of their course status after the application deadline, May 19, 2006.

Disease Reporting

AIDS/HIV .....(206) 296-4645
STDs .....(206) 731-3954
TB .....(206) 731-4579
All Other Notifiable Communicable Diseases (24 hours a day) ....(206) 296-4774
Automated report line for conditions not immediately notifiable…….. (206) 296-4782

Hotlines

Communicable Disease .....(206) 296-4949
HIV/STD .....(206) 205-STDS

Public Health-Seattle & King County Online Resources

Home Page: www.metrokc.gov/health/
The *EPI-LOG*: www.metrokc.gov/health/providers
Communicable Disease listserv (PHSKC INFO-X) at:
mailman.u.washington.edu/mailman/listinfo/phskc-info-x

Reported Cases of Selected Diseases, Seattle & King County 2006

	Cases Reported in March		Cases Reported Through March	
	2006	2005	2006	2005
Campylobacteriosis	17	32	52	65
Cryptosporidiosis	0	10	2	22
Chlamydial infections	582	643	1394	1510
Enterohemorrhagic *E. coli* (non-O157)	0	1	0	4
***E. coli* O157: H7**	2	2	3	2
Giardiasis	13	9	26	28
Gonorrhea	219	191	481	395
***Haemophilus influenzae* (cases <6 years of age)**	0	0	0	0
Hepatitis A	2	1	6	7
Hepatitis B (acute)	1	2	5	4
Hepatitis B (chronic)	63	45	181	129
Hepatitis C (acute)	3	0	3	2
Hepatitis C (chronic, confirmed/probable)	134	124	360	314
Hepatitis C (chronic, possible)	28	52	94	103
Herpes, genital (primary)	72	86	199	185
HIV and AIDS (new diagnoses only)	28	27	71	99
Measles	0	0	0	0
Meningococcal Disease	2	2	3	8
Mumps	1	1	2	1
Pertussis	16	28	44	48
Rubella	0	0	0	1
Rubella, congenital	0	0	0	0
Salmonellosis	17	18	43	54
Shigellosis	1	5	4	13
Syphilis	22	10	58	51
Syphilis, congenital	0	0	0	0
Syphilis, late	0	14	9	25
Tuberculosis	7	15	18	27

The *Epi-Log* is available in alternate formats upon request.